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ABSTRACT

An instrument for the evaluation of instructional materials is presented. Evaluative items are arranged under four constructs: objectives, organization of material (both scope and sequence), methodology, and evaluation. A section is also provided for summary quantitative judgment. A glossary of terms used in the instrument is included. A training period is recommended for maximum utilization. (JD)

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" EVALUATION OF INSTRUCTIONAL MATERIALS
FOR EXCEPTIONAL CHILDREN AND YOUTH
A PRELIMINARY INSTRUMENT "

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" EVALUATION OF INSTRUCTIONAL MATERIALS FOR EXCEPTIONAL CHILDREN AND YOUTH A PRELIMINARY INSTRUMENT "

By Maurice Eash

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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NEW YORK STATE NETWORK OF
SPECIAL EDUCATION INSTRUCTIONAL MATERIALS CENTERS

AN INSTRUMENT FOR THE EVALUATION OF INSTRUCTIONAL MATERIAL (FORM IV)

This instrument was developed as a response to a need to critically select on the basis of some criteria materials which have been produced in great quantity, and to improve the utilization of these materials. Broadly conceived the data by this instrument comes to bear overarching questions: (What instructional materials shall be selected for purchase? (2) How can these selected instructional materials be effectively used in the educational program?

In dealing with the issues of selection and use it was necessary to design an instrument that could be administered to a wide variety of material since the range of materials being produced has broadened proportionally to the quantity. As a result the central construct of the instrument were borrowed from those used to develop and analyze curriculum designs and are seen as necessary components of curriculum and instruction sequences. Under the four constructs: objectives, organization of material (scope and sequence), methodology and evaluation, series of items of the ways these constructs are generally provided for in instructional materials was established. When instructional material does not meet any of the listed contingencies, space for an open ended response is provided. Following the systematic analysis of the material, a summary quantitative judgment is made for each construct and an overall judgment of the material as a learning package. Also within the form are questions which elicit information on development and evaluation procedures used by the producer in creating the learning package.

At this time the instrument has proceeded through four revisions resulting in considerable change in the items and the building of a glossary of special terms. In addition field testing after a training period of two to four hours had produced data on rater reliability in the neighborhood of eighty percent as they were gathered over a variety of instructional packages. These data lend credence to the consistency of the instrument.

Due to the lack of familiarity with the technical language and the design framework of the instrument, a training period is necessary for maximum utilization. In the training period using teams of two or three in assessing materials has proven to be more productive than having individuals working alone. Moreover, the instrument serves a dual purpose as it trains teachers to systematically examine material, through sensitizing them to the producers intended use of the package. The maintaining of the integrity of the intended instructional design of new learning packages outside of the developmental setting has been of major concern to authors and producers who have posited failure to do so as a major contributor to innovative learning packages not performing to their original standard. It has also not been uncommon in field trials of the instrument to witness the development of awareness among teachers that scarcely any instructional material is a self contained learning package for a range of learners. Drawing attention to the way the instructional materials satisfy the four constructs in its design, teachers relate the feasibility of the learning package to the needs of target populations of children. Used over time in examining instructional materials for purchase, a school system could build a

valuable bank of data on strengths and weaknesses of competing materials.

At this time Form IV of the instrument has not been used in predictive validity studies to determine if there is a carryover of its second objective into classroom instruction. However, some of the research on instruction indicates that systematic attention to instructional design constructs of stating objectives, selecting appropriate transaction, and evaluating results does have a positive influence on instructional outcomes. Such evidence gives one confidence that a systematic appraisal of instructional materials is of value to the producer, the teacher, and the student.

EVALUATION OF CURRICULUM MATERIALS (Form IV)

1. OBJECTIVES

A. Are there objectives stated for the use of the material? Yes___ No___

1. General objectives? Yes___ No___

2. Instructional objectives? Yes___ No___

3. Are the objectives stated in behavioral terms?[1] Yes___ No___

4. If stated in behavioral terms, do the objectives specify:
   a. The type of behavior? Yes___ No___
   b. Conditions under which it will appear? Yes___ No___
   c. Level of performance expected? Yes___ No___

5. List examples of objectives.

B. If there are no objectives stated for the use of the material, are the objectives instead implicit[2] or readily obvious? Yes___ No___

1. If yes, please outline below what objectives you believe govern the purpose of the material.

C. What appears to be the source of the objectives (both stated and implicit objectives)?

1. Are the objectives related to a larger frame of instruction? Yes___ No___

2. Are the objectives specific to a subject skill? Yes___ No___

3. Are the objectives related to a broader behavioral pappern[3] that is to be developed over a period of time? Yes___ No___

4. What seems to be the emphasis of the objectives: (Check as many as appropriate)

   a. Attitudinal[4] _____
   b. Motor Skills _____
   c. Cognitive development skills[5] _____
   d. Subject skills _____

5. Are the objectives drawn from: (Check as many as appropriate)

   a. A learning approach[6] _____
   b. Society needs (citizenship) _____
   c. Demands of the subject _____
   d. Demands and needs of child[7] _____

D. Quantitative rating of objectives
(Directions: Please make andX on the rating scale below at the point which represents your best judgement on the following criteria. Please place the X on a specific point.)

Objectives - vague, unclear, or missing. Those included not useful. Fails to distinguish between general and instructional objectives, mixes various types of objectives, confusing to the teacher.	Average, some of the criteria for objectives met, some missing, at times inconsistent, objectives only partially operational for the classroom teacher.	The objectives are stated clearly and in behavioral terms. Both general and instructional objectives are stated in a consistent conceptual framework. Excellent, one of the best, useful for a teacher.

III ORGANIZATION OF THE MATERIAL (SCOPE AND SEQUENCE)

A. Has a task analysis[8] been made of the material and some relationship specified between the tasks? Yes___ No___

B. If a task analysis has been made, what basis was used to organize the materials: (Check as many as appropriate)
1. Errorless discrimination[9] _____
2. Simple to complex _____
3. Figure-ground[10] _____
4. General to specific _____
5. Logical order _____
6. Chronology _____

C. If no indication of a task analysis has been made, what assumptions do you believe the authors have made concerning the organization ofh the instructional sequence of the material?

D. Is there a basis for the scope of the material included in the instructional package? Yes___ No___

1. If there is a basis, is it:
   a. Related to a subject area Yes___ No___
   b. To a motor skill development Yes___ No___
   c. To a cognitive skill area Yes___ No___
   d. To an affective response system[11] Yes___ No___
   e/ Other (please specify) _____

2. Has the scope been subjected to analysis for:
   a. Appropriateness to students Yes___ No___
   b. Relationship to other material Yes___ No___

E. Is there a recommended sequence?

1. What is the basis of the recommended sequence? (Chec as many as appropriate)
   a. Inter-relationships of a subject[12] _____
   b. Positive reinforcement and programed sequence[13] _____
   c. Open ended development of generalization[14] _____
   d. Advance organizers (cognitive)[15] _____
   e. Other (please specify) _____

F. Briefly outline the scope and sequence.

G. Quantitative rating of organization of the materials (Scope and Sequence)

(Directions: Please make an X on the rating scale below at the point which represents your best judgement on the following criteria. Please place the X On a specific point.)

Sequence illogical or unstated, teach- is left to puzzle it out. Does not appear to have subjected materials to any analysis to build an instructional design. Scope is uncertain, seems to contradict sequence. Little help unintentionally to teacher or children in organizing material.	Average in organization. Some help .but teacher must supply much of organizational sequence. Scope somewhat limited, may be too narrow (or broad). Sequence is not detailed e enough and may not have been tested with a range of children.	Excellent organization of scope and sequence. Conceptually developed based on a consistent theory tas analysis or other appropriate investigation has been done. Tested for appropriateness, of recommended sequence.

III. METHODOLOGY

A. Does the author(s) and/or material suggest any methodological approach? Yes___ No___

B. Is the methodological approach if suggested, specific to the mode of transaction? Yes___ No___

1. Does the mode of transaction[16]: (Check as many as appropriate)
   a. Rely upon teacher-centric method[17] (largely teacher directing) Yes___ No___
   b. Rely upon pupil-centric method[18] (largely self-directing) Yes___ No___

c. Require active participation by the students?
Yes___ No___

d. Passive participation by the students? Yes___ No___

e. Combination of active and passive participation by the students? Yes___ No___

f. Direct students' attention to method of learning as well as the learning product? Yes___ No___

g. Provide for variation among students-uses several approaches to method? Yes___ No___

C. Does the methodology require unusual skills obtained through specific training? Yes___ No___

1. How much deviation is permitted in methodology?
Much___ Some___ Little___
2. Does the methodology require unusual skills obtained through specific training? Yes___ No___
3. Is there any statement on how methodology was tested any experimental evidence? Yes___ No___
4. If you have tried the recommended metholology, how successful did it seem for your students?
Most succeeded___ Approximately ½ succeeded___
Few Succeeded___

a. Please provide a brief description of the students who were successful and those who were not successful.

b. What variations on recommended methodology have you used?

D. In a brief statement describe the recommended methodology.

E. Quantitative rating of methodology

(Directions: Please make an X on the rating scale below at the point which represents your best judgement on the following criteria. Please place the X on a specific point.)

Very little help is given on methodology, or methodology is too abstract and complex for most students and teachers. Methodology appears to be unrelated to content and an afterthought in the learning package. Too

Gives some help to the teacher, but would like more. Some students would be able to cope with suggested methodology, but others not. Doesn't appear to have been widely field tested.

Uses a variety of modes in the transactions. Does not chain a teacher to a mode without reason but provides assistance for different abilities. Describes the field test of the methodology. Teachers will find

active or passive for most students. Teacher required to participate fully with too many students at every step. Doesn't have appropriate methodology for variety of learning abilities among students	Teacher has to work out variety for students with special learning difficulties.	Methodology easy to use and believe students will respond. Methodology is part of goals of instruction and not just vehicle for content.

IV. EVALUATION

A. Are there recommended evaluation procedures for teachers and students in the instructional package? Yes___ No___

1. What do the evaluation procedures emphasize· (Check as many as appropriate)
   a. Cognitive s ills _____
   b. Subject s ills _____
   c. Psychomotor skills[19] _____
   d. Affective responses[20] _____

2. Are the evaluation procedures compatible with the objectives? Yes___ No___

3. Are evaluation procedures developed for several different levels: (Chec as many as appropriate)
   a. Immediate feedback evaluation for the pupil _____
   b. Evaluation for a variety of the areas in #1 above and over a period of time_____
   c. Immediate feedback evaluation for the teacher _____
   d. Evaluation on a norm referent[21] _____
   e. Evaluation on a criterion referent[22] _____

B. Are the evaluation procedures contained in the package? Yes___ No___

C. Does the evaluation give attention to both product and process learnings? Yes___ No___

D. Is there information on how evaluation procedures were tested and developed? Yes___ No___

E. Briefly state what evaluation procedures are included if possible give examples.

F. Quantitative rating evaluation

(Directions: Please make an X on the rating scale below at the point which represents your best judgement on the following criteria. Please place the X on a specific point.)

Haphazard in approach. Product and progess learnings either entirely neglected or confused. Lists items, but poorly constructed, no evidence of testing of evaluation approach. Students receive no assistance through feedback. Fails to recognize and examine different types of learning where appropriate.	Some examples given range of evaluation limited. Samples given ut limited and sketchy. Teacher finds useful that which is given ut needs more examples. Evaluation is limited to product or process. Unsure on whether evaluation has ever been tested, but seems logical though limited in types of learning examined.	Many suggestions and helps in evaluation for the teacher. Has criterion reference procedures where appriate. Student obtains assistance in learning through feedback evaluation. Gives attention to several kinds of learning consistent with objectives of learning package

V. COMMENT

A. Draw up an overall statement of the strengths and weaknesses of the material as an instructional package. Prepare your statement as if it were to be addressed to your fellow classroom teachers who are going to use it to make a decision on these instructional materials.

B. Quantitative rating overall assesment of material

(Directions· Please place an X on the point in the rating scale which best represents your overall judgement of these materials. Please place place the X on a specific point.)

Poorly designed, conceptually weak, and inconsistent or haphazard design. Does not appear to have been field tested; inaccurate assumptions about children who will be using material. Overpriced, underdeveloped a bad bargain.	Has strengths and weaknesses, but most teachers would find satisfactory. On the balance comes out about average, would need considerable supplementary effort by teacher. A compromise on price and availability.	Excellent one of the best y comparison with other available material. Theoretically and conceptually strong and carefully field tested. Shows consistent instructional design. Would recomment highly, well worth the price.

A Glossary of Terms Used in this Instrument

1. Objectives stated in behavioral terms - a word picture of the type of behavior or behavior product which one might expect when the objective is achieved. Objectives stated in behavioral terms will usually name the behavior, state the conditions under which it will appear, and the level of performance expected, e.g., the child will be able to spell (type of behavior), in formal and informal writing (condition under which it will appear), 98 percent of the words in his written work (level of performance).

2. Implicit objectives - an examination of the content will permit the reader to readily identify the objectives that the student should accomplish, even if the producer has not stated them. If a filmstrip gives the sequential steps in solving arithmetic problems using long division, one would assume the implicit objective to be to teach the student the process of long division.

3. Broader behavorial pattern - instructional materials frequently are geared to goals that include complex behavior which is to be developed over time. Example: voting behavior as a function of citizenship involves a broader behavorial pattern which chains together a complex of behaviors ranging from knowing the candidates and the issues, to being registered, and knowing how to operate a voting machine. The instructional material may be designed to contribute to a broader behavioral pattern rather than a simpler, more specific behavior. Even if the objective is geared to a single specific behavior, there should be some relationship to a broader behavioral pattern.

4. Attitudinal objectives - objectives that are designed to develop feelings and predispositions to act in accordance with internalized values and beliefs. These may be listed as attitudes, values, interests, and appreciations. They may be fairly direct as to develop in each student an interest in listening to a newscast at least once a day, or more complex as the forming of an attitude of critically evaluating the news by investigating the source of reports.

5. Cognitive development skills - objectives which have cognitive development skills (thinking) as a basis will usually emphasize thinking processes as their focus, such as understanding, discriminating, utilizing, chaining, and evaluating as opposed to emphasizing specific subject products.

6. Objectives drawn from a learning approach - objectives may be drawn utilizing approaches to learning, in some cases emphasizing wholeness of learnings prior to fragmenting into specifics for instruction. Example: the student will become familiar with the background of the 12th and 13th century European interest in colonies and trade, prior to studying the specific explorations. The extreme of the above approach would be a small step by step sequencing of the material on Europe in the 12th and 13th century in which concepts on European interest in trade and colonies were fed to the student on a programmed basis, eventually leading through the various explorations. These contrasting objectives are based on different approaches to learning.

7. Objectives based on demands and needs of child - objectives using this emphasis usually have as their focus some developmental sequence (physical, emotional or social) as their central organizer. Example: the student will express affection as well as receive affection. The behavior of expressing affection is developmentally more advanced than simply receiving affection. Example: the student will cooperate with another student on taking turns in using a game. If this objective is to be taught, it is usually sequenced with other objectives according to the way most children develop.

8. Task analysis - the materials have been developed into specific tasks for the learner which have behavorial requirements that suggest a sequence for presentation and which allow an observer to determine if the learner accomplishes the task.

9. Errorless discrimination - the tasks are sequenced in such a manner that the student should move from step to step without making errors. This technique is used in some types of programmed instruction.

10. Figure-ground - the organization of materials, frequently perceptual in nature, in a field so that one stands out in a distinct way (figure) and the rest remains in the background (ground). Figure-ground organization can be used with other characteristics such as sounds, where one sound is heard over and above a background of others.

11. To an affective response system - where recognition is given to different levels of attitudes, from the simplest, of merely attending to an object, to the building up of complex attitudes which predispose one's behavior toward a wide range of stimuli, e.g. enjoying a variety of forms of music.

12. Interrelationships of a subject - where the subject matter contains a logical relationship of concepts and processes. Example: adding must be mastered prior to multiplying. The local community is studied prior to more distant entities of state or federal government.

13. Positive reinforcement and programmed sequence - where the material has been developed into small steps that lead the learner toward a larger concept through a sequence that permits the learner to receive frequent reinforcement through knowledge of right answers.

14. Open ended development of generalization - the instructional sequence is purposely quite unstructured, e.g., letting the learner try out many possibilities and alternatives before arriving at a generalization.

15. Advanced organizers (cognitive) - a framework of key concepts, crucial to understanding and relating concepts of the larger body of material, are strategically placed in the sequence, forming an ideational ladder to which other material can readily be related. In some materials a short summary preceding the main body of instructional material delineates the key concepts or stresses their relationship to other concepts known by the learner, thus serving as advance organizers through the ideational anchors it gives to the learner for organizing, relating and remembering the new material.

16. Mode of transaction - a transaction is the interaction of a learner and stimuli, in this context consisting of instructional materials. A mode is the channel that is used. Is the student asked to passively view, manipulate, verbally organize? Is the teacher an important part of the mode through exercising control over the learner's channels of transaction? Is the student free to seek out channels of transaction or are they chosen for him? These are questions which must be answered when setting up modes of transaction (methodologies) to be used with instructional materials.

17. Teacher-centric method - the teacher is largely responsible for choosing and directing the mode of transaction for the learner. Teacher-centric modes of transaction usually prescribe that the "teacher will..." and are predicated on obtaining specific learner responses.

18. Pupil-centric method - the learner is responsible for choosing the modes of transaction with the instructional material and is frequently left to evaluate and revise his behavior toward materials without teacher supervision.

19. Psychomotor skills - muscular or motor skills which require manipulation of material or objects. The ability to stack blocks is a psychomotor skill.

20. Affective response - responses which emphasize feelings, emotion or degrees of acceptance or rejection stemming from internal attitudinal sets. Such responses may be labelled attitudes, biases, interests, etc.

21. Norm referent evaluation - judging a learner's performance by what other known groups of learners do on the same tasks. Achievement test scores, aptitude tests, and mental test scores report their results in norm referent terms. The statement, "This particular learner scored at 4th grade level," is using a norm referent evaluation of the learner's performance.

22. Criterion referent evaluation - the learner is judged on his ability to do a specified task or demonstrate the behavior appropriate to the task. The learner is judged on whether he can or cannot demonstrate the appropriate behavior that signifies task accomplishment and <u>is not</u> judged by comparison of his performance with another group of learners.